

# 432 AND ABOVE EME NEWS

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A Note by Scott, KD4LT.

Gents,

Here is the Jan 1995 432+ Newsletter. Happy New Year to all and I hope to see most of you at the EME Conference in Washington DC later in the year.

Tnx es 73's

de Scott-KD4LT

I like to add my best wishes to all for 1996 as well.

Rein-W6/PA0ZN

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**CONDITIONS:** Things were pretty much back to normal for the Dec SW. Conditions and activity were good, but without the frantic pace of a contest weekend. The next official SW will be 6/7 Jan. If you look at the 95 and 96 EME Calendars, you will see there was an interface problem. Both 30/31 Dec 95 and 6/7 Jan 96 are listed as SWs. It was decided to make the official one 6/7 Jan. The Jan condx are somewhat degraded due to apogee, but the dec is higher. It is basically a wash. To ease the conflict with the New Year's eve, it was decided to go with the Jan dates. However, extra activity is expected on the Dec weekend. So if you can be around, ring in the new year off the moon.

## CN2EME - MOROCCO95

432 MHz EME DXPEDITION STORY: Patrick (F6HYE) writes -- Our last expedition was CS1EME, in 1992. To prevent rust from corroding our antennas and ears, it was high time to find a new destination. In July we learned of a great opportunity to operate from Morocco. We decided to be active from Rabat, during the 2nd part of the ARRL EME competition. The next 3 months were very busy, checking the system, new tracking software and new power amp, and packing everything again. The expedition started from Marcorens in south-east France at 0330, Saturday, 28 Oct. After an hour drive, I met Patrick F6IRF in Annecy. Then on the road again for some 550 km, and the last guy, Gerard, F5JBP joined the team in Narbonne (south-west France). An hour later, we crossed the French-Spanish border, and thanks to the Eur Community, no problem at the customs. Traveling through Spain is rather long

and tiring. Fortunately, despite a small breakdown in the front brakes, quickly fixed by Gerard, we were able to catch a car ferry immediately upon arrival in Algeciras. 2.5 hours later, we arrive in Tangier, Morocco. Again, thanks to the temporary import authorization, no major problem with the customs. Another few hours drive and we were in Kenitra, very close to Rabat, in the early evening of the Sunday. Total distance was 2500 km, covered in slightly less than 36 hours. On Monday morning, we met our friend El Habib, CN8OH, who drove us to Said's (CN8GG) office. With Said and El Habib, we looked for a good site for the station. Locations were carefully checked (noise, el, risk of TVI, etc.) We found that the most interesting location was the small house of the ARRAM (Association Royale des Radio Amateurs Marocains). The terrace roof was large enough to accommodate the antenna system. And last but not least, the house is fully equipped with HF beam antennas from 40 to 10 meters, including the WARC bands. On Monday afternoon, we managed to get all the material to the club's roof. On 1 Nov, after 2 days of hard work, the station was ready. The 1st tests gave good echoes, but nobody was on the band! During Thursday, we made test measurements, and had enough free time to visit Rabat. EME activity started on 2 Nov with JA5OVU and ended on 6 Nov, in the very early morning. We worked 74 different EME stations and made 94 QSOs. During free time, we also managed to operate on HF, specially on the WARC bands. 2710 calls were logged. We were visited by many amateurs from Morocco and abroad. This led to some very nice discussions in the club house. On 6 Nov, after a few hours rest, we dismantled the station and packed up. We said our farewells to our Moroccan friends, and start the long trip back home. The EME GROUP team consisted of F5JBP (Gerard), F6HYE (Patrick) and F6IRF (Patrick). The QSL Manager is Noel CHENAVARD, F6BGC, F-74160 BOSSEY. CN2EME was located in grid IM63nx and consisted of 8x10.5 w1 yagis with 6 mm dia symmetrical phasing lines, 2x8930 K2RIW style HPA (unfortunately we had to use our spare amp, because 380 V three phase was not available for our TH327 cavity amp), 2 stage MGF1302 LNA with 0.35 dB NF, and HB tracking interface and software. Sun noise was around 16 dB with a solar flux of 73 giving around 11.5 dB system G/T. Logged were, on 2 Nov at 1551 JA5OVU, 1750 HA1YA, 2047 DK3WG, 2101 DF3RU, 2108 I5TDJ, 2140 OM1TL, 2149 DK8LV and 2202 OM1TF, on 3 Nov at 1613 SM2CEW, 1646 SM3AKW, 1700 F5FLN, 1713 I5CTE, 1739 HG1W, 1813 F6CGJ, 1824 G4RGK, 1834 IK5WJD, 1842 G3SEK, 1941 G4ALH, 2034 OK1KIR, 2038 PA3CSG, 2057 DK8VS, 2126 DL9EBL, 2130 ON4KNG, 2135 IK1MTZ, 2158 DL6NAA, 2218 DJ6MB, 2221 K5JL, 2230 N2IQU, 2246 IW5AVM and 2257 DL0UL, on 4 Nov at 0015 SM4IVE, 0019 DL9KR, 0021 SM2CEW, 0025 K2UYH, 0028 IK1MTZ, 0043 OH2PO, 0046 F6CGJ, 0053 S51ZO, 0059 F5HRY, 0107 HB9SV, 0111 K1FO, 0116 F5FLN, 0123 K0RZ, 0128 DL9NDD, 0137 WA4NJP, 0223 OE5JFL, 0230 IW5AVM, 0313 W1ZX, 0330 VE1ZJ, 0336 N4GJV, 1703 DL8OBU, 1719 JA9BOH, 1725 ON4KNG, 1754 EA3DXU, 1757 G3SEK, 1802 DK3WG, 1816 SM3AKW, 1824 UT5DL, 1834 HA1YA, 1906 IK4JOC, 2029 UR5LX, 2055 G4ERG, 2115 DF6NA, 2131 DL9EBL, 2142 K3HZO, 2151 G4ALH, 2159 EA2LU, 2241 DL0UL and 2231 UA6LGH, on 5 Nov at 0003 OH5IY, 0020 KD4LT, 0152 NC1I, 0203 W7CI, 0216 W7FN, 0226 KB8ZW, 0300 HB9SUL, 0307 G3LQR, 0330 F6IOC, 0418 W0RAP, 1659 DL9KR, 1712 UR5LX, 1736 I5CTE, 1755 EA3DXU, 1758 DJ6MB, 1803 I5MPK, 1815 JS3SIM, 1823 JH0YSI, 2000 DL4MEA, 2009 YO2IS, 2048 G3HUL, 2106 IK2EAD and 2135 DL6WU, and on 6 Nov 0014 KA0RYT, 0027 K1FO and 0300 K6HXW. The YOTA SAWE team wishes to express their thanks to all those who helped with the expedition - especially El Habib, CN8OH who took care of the administrative tasks; Said CN8GG for his help in finding a good location for the station; Mustapha, CN8MK and all the members of the ARRAM for lending the house of the club CN8MC and for the very nice discussions during the stay; Jacques, F6TEM for trimming the double stage preamp; and to Dieter, DC6GC for the spare preamp. They also want to thank all the EME operators for the fun they gave us while working them. Patrick (F6HYE) can be reached at (DPMC, University of Geneva, 24, quai Ernest Ansermet, CH 1211 Geneva 4, Phone: (+41 22 702 6212), Fax: (+41 22 702 6869).

#### **DK8LV:**

Stephan reports about his success on 1/2/3 Dec. He found the condx quite good, especially in contrast to 4/5 Nov. He could read his echoes FB, so he knew when he was on the moon, which is not easy with his the rotator system. Stephan notes that the measured power (on a Bird) at the feed is only 170 w. He

would be happy to have the earlier mentioned 400 w instead. He is currently working on a K2RIW PA. He found all QSOs relatively easy to work. Contacted were, on 1 Dec at 2230 W1ZX (O/M) for initial #11 and 2330 SM3AKW (549/439) #12, on 2 Dec at 1500 JH0YSI (O/O) #13, 1628 DL9NDD (449/O), 1920 ON4KNG (O/O) #14, 1924 HB9SV (449/439) #15 and 2025 K1FO (549/439), and on 3 Dec at 0000 KD4LT (559/549) #16, 0020 WA4NJP (439/549) #17, 0117 G3SEK (O/O) #18, 1610 EA2LU (O/M) #19 and 1725 nil I5MPK. Heard were JA4BLC, HA1YA, K5GW (569!), NC1I and VK5MC.

#### **DL4MEA:**

Guenter reports on his Nov contest efforts -- It was a great pleasure for me to operate the EME contest in Nov with my HB 6 x 33 el DJ9BV OPT-70 yagi array, especially as I managed to receive my echoes for the 1st time, and since have always been able to read them. (Before I did not calculate the Doppler shift right, hi). The next step will be to improve my RX preamp. All the time, I thought that my RX was not as good as my TX. Also, some stations are running too high a CW speed. If I use both my filters together (600 Hz and 100 Hz TSG8550), it becomes very difficult to read the dits. People should think about reducing their speed down to 60 BPM or lower. I use an RIW final with about 1.5 dB of feedline loss and a MGF1302 preamp. I managed to work 12 QSOs (excluding a double with OH2PO/OH2WO). Contacted were on 8 Oct DL9KR, SM4IVE, OE5JFL, CWNR I2COR, HB9SV and OH2WO - wrong call (OH2PO), on 4 Nov hrd KD4LT, N2IQU, hrd K2UYH, K1FO, PA3CSG, OH2PO and CWNR CN2EME, and on 5 Nov JA6LDK (? - I had a problem with the CW), UR5LX, JL2OCF (?), CN2EME (wow!), SM3AKW and F6CGJ.

#### **DL6WU:**

Gunter had no luck locating a replacement 8938 for his PA, before the 2nd part of the EME contest. So, in despair he tried calling with only his 100 w driver stage. He notes that this gave some people a hard time, but he ended up with 7 QSOs - DL9KR, SM4IVE, K1FO, OH2PO, N2IQU, OE5JFL and CN2EME - with a little help from DL9KR. This shows the immense progress in station equipment, Gunter does not think anyone would have heard him a few years ago.

#### **F6CGJ:**

Louis gives us his view of ARRL Contest conditions... 70 cm was generally poor with friendly polarization much of the time, and heavy QRM from the radio location system. He says that, in France, 70 cm will be lost in the next few years. Louis was running 1 KW with an 8 m dish, on this band. He preferred 1296 which had less QRM and no pol problems. He uses the same dish, with 200 w at the feed, on 23 cm. He blew his 1296 PA once more, but still spent more time on this band than any other. His efforts were rewarded by a QSO with LX1DB, after 5 years of waiting. On 10 GHz, he uses a 3.2 m dish with only 12 w. He worked DJ7FJ and F6KSX, and says that F6KSX continuous operation (TX ever 2.5 minutes) made their signal "beacon" like, and was very helpful. Louis used an IMU type horn on 3 cm, and gets 5.5 dB CS/G noise and 1.8 dB of moon noise. He wants to get an auto tracking system and higher power for this band. Louis ended the contest with a score of 44x21 on 70 cm, 53x25 on 23 cm, 2x2 on 3 cm, and 7x6 on 200 cm. He is planning to attend the 96 EME Conference in Washington.

#### **G3FPK:**

Norman sends the following thoughts regarding the ARRL EME Contest dates -- The question of ARRL EME Contest dates is a classic case of "You can't please all of the people, all of the time." I agree that a couple of weekends in the Fall seems the best compromise, for the reasons Steve (K1FO) discussed in NL #13. In the British Isles we often enjoy good tropo in Oct and early Nov - the 1st G/HA QSOs on 23 cm occurred during the major European UHF/SHF contest on 7/8 Oct, during the 1st leg of the EME event. As for WX, it can be anything from warm, balmy days with high pressure to howling gales (on 16 Oct in 87, we had a genuine hurricane which felled 70,000 trees in my area alone, and brought down half the amateur antennas in southern England.) As for contests, these fall into two categories: 1) Short "parochial" ones, like the 2-4 hour and cumulative events, and 2) Major international 24-hour events. The dates for the latter are decided by IARU Region 1 well in advance; the calendar for 1996 was

published in the Sep 95 issue of the RSGB's journal Radio Communication. In 1996, 5/6 Oct is the 432 MHz - 24 GHz IARU contest and 2/3 Nov is the Marconi Memorial CW contest. Ian's (G3SEK) 1996 Weekend Calendar shows both these weekends to be suitable for EME - high dec, low sky temp, even if at apogee. However, the previous weekend would seem a better compromise for the ARRL dates. 28/29 Sept doesn't clash with any Euro-event, and although Moon time is less, path loss is less and sky temp is OK. There is more Moon time on Oct 26/27 as the dec is higher, and ther parameters are favorable. So, on balance, I would agree with the K2UYH suggested SWs of 28/29 Sept and 26/27 Oct for the ARRL EME Contest. I propose to air this topic in my monthly VHF/UHF News column in RadCom. Please send comments to: [G3FPK](mailto:G3FPK) or (Tel/fax UK 0181-763 9457, interna- tional +44 181 7639457).

#### **G4DZU:**

Doug writes -- I missed the Dec skeds in the NL, and thus was not on. In any case, I would have been unable to be QRV for the SW, (also G4CCH), due to bad wx. We had the 1st real snow of the winter! I had a great time in the 2nd part of the contest and ended up with a score of 8x7. Not a large score, but a great mile stone for myself as the system is now, after 2 years, getting to the stage where I can say I can see light at the end of the tunnel. During the 1st half I had 150 w out and linear pol. I QSO'd OE9XXI, OZ4MM and IY4ARI. In the 2nd part, I had about 300 w, and circular pol. QSO'd were AA6WI, OH2AXH, DL9EBL, KB2AH and OE9ERC. The most outstanding signal was DL9EBL (559) on a 10' dish. Since then I have seen 700 w out of my YD1336, but I still have to cure the odd flash over. It does run at 400 w out all day. Because of tree blockage, I have a strange window of about 110 Az at 15 El to 140 Az, and then 200 to 240 Az at 20 El. At high dec, I can go from 110 Az right to 240A Az. I plans to be QRV on 23 cm for most of the Jan SW.

#### **HL5QO:**

Jinson (PM45bd) is working on 1296 EME seriously. He has a 29.2 dBi quad array of horz yagis, 0.4 NF CYA-1251W2 LNA and 22 m of 7/8" Heliac cable. Last year he heard OE9XXI's signals (O) several times. Jinson can be reached via E-mail at [HL5QO](mailto:HL5QO), or Tel 0591-759-8123, Fax 0591-751-2004.

#### **HP3XUG:**

Louis' system does not seem to be working as well as it did in DU1 and HL9. He has had problems with blown preamps, and does not have a NF meter to check the level of the repaired ones. Near constant rain since June, has prevented Louis from tearing things apart, without the danger of getting everything soaked. But the dry season is coming (after mid Dec), and he should be able to then make improvements. Louis plans to change the feed system to allow operation at el above 60 degs. During the contest he worked on 432, on 7 Oct SM4IVE, SM2CEW, N4GJV, K1FO and N2IQU, and on 5 Nov WA4NJP and DL9KR.

#### **I2COR:**

Luigi's team's contest efforts were frustrated by tropo QRM from stations operating the Eur and Marconi Memorial Contests during the Oct part, and by high winds (80-100 Km) during the 2nd half, which made pointing their 10 m dish impossible. They worked, on 432, on 7 Oct I5CTE, UR5LX, K0RZ, OH2PO, K1FO, F6CGJ, IK1MTZ, OE5JFL, DL9KR, DL6NAA, SM3AKW, DL9NDD, IK5WJD, K2UYH, DL8OBU, SM4IVE, UT5DL, JL1ZCG, ON4KNG, JA5OVU, G4RGK, ON5OF, G3SEK, SP5CJT, DL9NDD, F5FLN, I5TDJ, F2TU, IK5QLO, G4ALH, SM2CEW, N4GJV, UA6LGH, EA3DXU, U5JJI [?], OH5IY, WA9FWD, N2IQU, W7CI, JA4BLC, IN3KLQ, JA9BOH and EA2LU, and on 4 Nov WA4NJP, DL6NAA, DK3WG and HA1YA; and on 1296 on 4 Nov OH2AXH, OE5JFL, OE9XXI, DL9EBL, OZ4MM, DL0SHF, ZS6AXT and F1ANH.

#### **JA4BLC:**

Yoshiro writes -- This weekend, 2/3 Dec, I worked on 432 SM3AKW, JA2KRW, DL9NDD, DL6NAA for initial #225, DL8OBU and W9QXP, and on 1296 SM3AKW, OH2AXH and LA8LF on 1296. Heard on 1296 were JR4AEP, ZS6AXT and VK5MC. Back on 11 Nov, on 1296, I worked IK3COJ and

DJ9YW. On 25/26 Nov, Ken (JR4AEP) and I drove 500 km to visit Shichiro (JA6CZD). He is working on 1296 and 2424 systems with a 7 m dish. We brought for Shichiro's use a 1296 OZ9CR ring amp (350 w), just finished before the travel, and a 2424 VE4MA amp (100 w), used at JA4BLC the last 2 years. The OZ9CR ring amp was finished recently. It was sent from Hans about 10 years ago. The amplifier was tested with air-cooling, and produces 450 w with a plate higher voltage of 1600 V. The output loop modification suggested by G3YGF is a great help. Bias and current limiting circuit by K4QIF are also employed. I observed some thermal drift, and think water cooling is necessary at this power level. (Thank you very much Hans for providing a big amplifier. I am sorry for not having finished it, in his life time.) In Oct/Nov, I completed other big amplifiers for 1296 MHz (500 w) and 2424 MHz (300 w). I hope to have these in my EME rack next month. I am looking for information and tune-up procedure on the JAN 8493 klystron. JR4AEP and I have salvaged some klystrons and two final PA units with power supplies, used in a VOR station. The klystrons were made by ITT, and are good in appearance. They have 3 cavities, with input BNC conn., middle BNC conn, and output with big connector. I guess from the power supply that these klystrons were working at 10 KW output, pulsed operation at 12 KV DC beam voltage and 0.1 A current. Does somebody have information on these tubes and suggestions on the possibility of CW operation on 1296 MHz? [Years ago, I got a hold of some SAL 89 klystrons, which sound similar to the ones you described. The SAL 89 is 10 KW pulsed klystron which can be made to tune 1296. A number of hams (including W2IMU and K2TKN) tried to make these tubes work satisfactory on CW, but we were unsuccessful. The "rising sun" grid structure would short when power was applied for long (pulse) periods.]

**JA8ERE:**

Mikio will be QRV on 3-band EME (432, 1296 and 2424) with a high power permit soon. In the ARRL EME competition, he QSO'd OE9XXI, IY4ARI, VE3ONT, OZ4MM, HB9SV, OK1KIR and partial K2UYH. He can be reached by E-mail at: [JA8ERE](mailto:JA8ERE)

**JA9BOH:**

Kimio is looking for 1296 skeds with big gun stations. He is using linear pol (vert) to a 2 m dish and has a 100 w PA. His standings on 432 are initial #253, DXCC 45 and WAS 40, and on 1296 initial #2 and DXCC 1.

**KA0RYT:**

(EN34 from Minn) says he had beginners luck in the ARRL Contest. He is using 4x24 el CC yagis modified per K1FO and 800 w from an old RCA 6181 cavity amp. He is now up to initial #12. He QSO'd on 7 Oct N2IQU, K1FO, OE5JFL, N4GJV, K2UYH and K0RZ, on 8 Oct SM4IVE and WA7BBM, on 4 Nov SM2CEW, DL9KR and NC1I, and on 5 Nov OH2PO and W7CI. CWNr were W7HAH, K5GW, K5WXZ, W7HAH, KB8ZW, NP4Z and JA9BOH. He can be contacted for skeds at Tel 612-472- 5201.

**K1FO:**

Steve was very concerned, but not surprised, to read Herve's (F5HRY) comments on QRM from commercial users at 432 MHz in France. He is surprised, however, at the implication that there is no problem at 434 MHz. Steve has long thought that 70 cm weak signal operators should be promoting the assignment of a segment of the 70 cm band to amateurs on a primary basis. He thinks, the only way this could work is to attach EME and weak signal operation to a frequency slot adjacent to the 434 MHz satellite allocation. Unfortunately, the ARRL's position at the last WARC and other frequency allocation meetings has been to try to save the entire US 70 cm band, which is a shared band with amateur operations as a 2ndary user, rather than move to obtain a smaller allocation with amateur use as a primary allocation. Steve does not see any technical problems in moving from 432 to 434 MHz, other than a few yagi stations may have to adjust their driven elements or trim their directors by a couple of mm. There is a more significant problem in NA, where 434.250 has become the fast scan ATV simplex frequency. Steve often has QRM from fast scan ATV stations operating on 434 MHz. Many of them still

run dual sideband AM video, and insist on running wide bandwidths. In the US, there are no regulations about signal quality or bandwidth at frequencies above 420 MHz. Modulated oscillators are still legal! The ATV operators do not feel that they are causing any problems, since the satellite operators at 434 MHz are aiming off the horizon. In addition with the current satellite operational status, there is virtually no operational modes with 434- 435 MHz downlinks, so ATV and satellite QRM has yet to be a problem. Steve is interested in the comments from other operators about 70 cm band problems, and if moving to 434 MHz would solve more problems than it would create. He feels that there would be strong resistance from the terrestrial operators to move away from the traditional 432 MHz frequency. He also reminds everyone that the only reason 432 and 1296 MHz were chosen as activity frequencies was their harmonic relationship to 144 MHz. With modern technology, it may be time to re-think where we operate in the bands. Stations worked were: on 23 Nov K3HZO - (who was giving an EME demo to G8LMW; Chris, G8LMW is planning to become QRV on 70 cm EME), on 01 Dec I5CTE, DL6NAA, EA3DXU and KA0RYT, on 02 Dec W9QXP, K5WXN, EA2LU, G4ERG, G3HUL, DK8LV, HA1YA and DK3FB, on 03 Dec WA4NJP on CW & SSB, KL7HFQ, DL8OBU and G3HUL, on 05 Dec W9QXP and W8MQW, on 06 Dec K5GW, on 07 Dec W8MQW, on 09 Dec JA5OVU - (which was Steve's 4,000th 70 cm EME QSO!), JA6XED and JA4BLC, and on 10 Dec JA2KRW. Steve has heard a lot of complaints about lack of activity recently. Although he was disappointed not to work any initials, he thought that activity was good in Dec, as he worked over 20 different stations, and heard about 10 more that he didn't work. This was done in about 6 hours of operating time. One factor in activity and selecting the skeds weekends, that Steve feels should be paid more attention to is the hours which the moon is up. He was very disappointed to hear that the next skeds weekend has been moved to Jan 6 & 7. On this weekend moonrise is in the evening. This means that by the time the moon is up at a reasonable el for most US stations, it is the middle of the night (2-4 AM) in Eur. Although moonset is in the early morning, Eur will be unlikely to find many US stations on when it is 2 or 3 AM here! He understands the conflict with the New Years holiday on the previous weekend, but when the moon rises in the afternoon both the US and Eur stations can get on and work each other without having to get on during the middle of the night. There are 3 factors which are affecting activity on EME. 1) EME is no longer the novelty it once was. 2) The amateur population is aging. 3) Global competition has forced many companies to reduce their staffs forcing the average working person to spend more hours on their job, leaving them with both less time and energy for their hobbies. These factors make it important to both select the EME activity weekends with operator convenience in mind, and when one has limited operating time, that time must be chosen with the thought as to when stations in the rest of the world may be able to operate. Steve has a final thought on activity. At the Central States VHF conference last summer a hot topic was how to get more amateur operators interested in VHF/UHF weak signal group. There have been many 70 cm operators who have done a great job in helping new stations become active on 70 cm EME (DL9KR for example). If every active 70 cm operator set a goal for 1996 to encourage or help at least one new station become QRV on 70 cm EME by the end of the year, I'm sure that there would be far fewer complaints about activity on EME. Steve corrects his initial total as he had counted DK3WG as an initial, when of course it is the new call for DL3BWW. Steve's 70 cm totals are #485 initials, 49 states and 74 DXCC.

#### **KD4LT:**

Scott was able to be on for most of the Dec weekend and heard lots of stations. Signals on the 1st night seemed somewhat down in comparison to the 2nd night. Overall, conditions were very good. Scott worked 26 Nov KB6IGC (M/O) for initial #265, on 2 Dec K5GW #266 and DK8LV #267. Also worked were WA4NJP, HB9SV, W1ZX and NC1I. Heard were N4GJV, W9QXP, K3HZO, KL7HFQ and K0RZ. Scott plans to be on for the 6/7 Jan sked weekend.

**In response to recent discussions concerning the dates for the ARRL EME contest, Scott agrees with the dates suggested by K1FO. Considering the amount of Eur participation, Scott feels we should avoid any dates that conflict with major contest in Eur. The other factors, high dec/low noise, etc, should also be considered, but 2ndary to the conflict in Eur. Scott feels that everyone who has any interest in the next contest dates should offer input to Bill Lunt at ARRL**

**headquarters. If we don't offer our opinions now, then we have no right to complain later.**

Totals for KD4LT on 70 cm are initial #267, DXCC 45 and WAS 32, and on 23 cm initial #4, DXCC 2 and WAS 3.

#### **N1BWT:**

Paul has conducted some 10 GHz sun noise measurements which may be of interest to the 3 cm EME community -- I finally got a chance to do some more sun noise measurements at 10 GHz. This time of year, the sun isn't high in the sky for very long, and good weather on a weekend with free time around noon is tough. 10.368 GHz results were as follows: Std. gain horn (22.45 dBi) - 0.35 dB; 30" dish with modified Chapparral feed - 3.2 dB; 25" dish with Chapparral feed - 2.3 dB; 18" dish with Clavin feed - 1.6 dB, 18" offset; RCA, SMC, rect. horn feed - 2.5 dB; and 18" offset, DSS, steel, rect. horn feed - 2.4 dB (dinged in fall). Note CS/G noise with std. gain horn was about 3 dB. The preamp was a modified LNB with a 2.9 dB NF at the feed. The noise level was measured with a 45 dB gain broad band amp at the IF, filter and HP432A power meter. A step attenuator was used to set the level on the power meter as high as possible for minimum drift while staying below compression in the last amplifier. G3WDG in a recent DUBUS article on the 144 MHz version, points out that the noise compression point of an amplifier is typically 10 dB below the signal compression point, and we need to be below the 0.1 dB compression point to get linear results. With my amplifier, I found that smaller than 0 dBm of noise is linear, and the HP432A is quite stable on this range (older models are less stable, especially on the lower ranges). The DSS offset dishes were previously measured as having excellent efficiency, >60%, with the rectangular horn feed, when pointed at a high elevation, the offset feed spillover illuminates mostly cold sky, while a prime-focus dish spillover illuminates mostly warm earth.

**Thus the G/T of the offset dish is significantly better than a prime-focus dish, as shown by these results. It is pretty obvious why the DSS TVRO systems use offset dishes - it would take a significantly larger conventional dish to get the same picture quality.**

#### **NP4Z:**

Steve reports that he has been able to eliminate all the thermal drift problems, which were encountered in early models of his 4CX1600U amps. This was accomplished by modifying the airflow through the socket. From cold start to 2 minutes operating time at 1500 w out, no thermal drift is observed. Conditions are 3.2 KV at 700 mA on plate for 2240 w in and 1.5 KW out at 66 % efficiency, 520 volts at 15 mA on the screen, and -66 volts at 40 mA on the grid. With -44 volts on the grid (recommended linear service), Steve finds no significant decrease in efficiency. K5GW is using one of his amps and was able to peg a 2.5 KW Bird slug. This was with 3.8 KV at 1.1 amps on the plate for an efficiency of about 60 %.

#### **OE9XXI:**

Peter writes -- I worked, on 1296, 3 Dec ZS6AXT (559/579), OH2AXH (569/579), DK7LJ (54/56) on SSB - same as DL0SHF, G3LQR (549/579), SM2CEW (559/589), DF3RU (54/57) on SSB, LA8LF (569/589) and (54/56) on SSB. Our HB0/HB9 dxpeditions were not very successful. On 30 Nov we set up the equipment for test at the site of OE9FKI. CS/G noise was 4 dB with the 3.2 m TVRO dish (.3 f/d) using a WA9HUV feed. Moon noise was 1 dB. We heard no echoes with 20 w at the feed. Unfortunately it was too late to check the dish on sun noise. The next day we moved the complete station to Liechtenstein, using a van. When we were ready with the receiver, the sun had already disappeared. Again no echoes and low moon noise was received. The 1st signal heard was OE9YTV resulting in an incomplete QSO (M/T), later we made it (M/M). This was the only complete QSO. Others heard were SM4DHN (T/-), WB5LUA (T/-) and VE4MA nil. The next morning, we measured sun noise, and found it to be only 8 dB. This is 3-4 dB less than expected. A replacement feed horn (VE4MA type) produced no change. We then checked the shape of the dish, and found it to be deformed. There was a peak error in the shape of about 15 mm (3/4"), and no chance for repair. As a consequence, we decided to cancel the HB9 activity set for 2 Dec. But we will try again in the future... next time with a good dish.

**OH2AXH:**

Pasi (OH2BNH) has sent a copy of the log of the SIPOO EME Racing Team (OH2AXH, OH2BNH, OH2BSH and OH2LCT), which operated OH2AXH in the ARRL Contest. They operated only on 23 cm, using a 6.4 m dish with VE4MA horn and 500 w TH338 PA. QSO'd were on 7 Oct F1ANH, DF3RU, HB9BHU, IY4ARI, DJ9YW, OE5JFL, ZS6AXT, HB9BBD, EA6/DF5JJ, IK3GHY, DF9QX, F5PAU, OE9FKI, OE9XXI, OE9ERC, VE3ONT, OZ4MM, DD1XF, AA4TJ and G4CCH, on 8 Oct SM3AKW, KB2AH, EA3UM, IK3COJ, K3EAV, DL6YDH, W2UHI, WD5AGO, F5PL, JA4BLC, F6CGJ, DL9EBL and G3LQR, on 4 Nov DL0SHF, JH3EAO, LA8LF, OK1KIR, I2COR, JH5LUZ, DD1XF (dup), G4DZU, F5AQC, SM4DHN, GW3XYW, VE1ZJ, SM5DGX, DJ9YW (dup), VE1ALQ, W4RDI and K2UYH, and on 5 Nov AA6WI, KD5RO, K9KFR, F2TU and LX1DB, for a total score of 53x24, and initial #93.

**SM2CEW:**

Peter was active on 432 and 1296 during the Dec SW -- On 432, I had some problems with ice on my feed, so it was not performing as it should. Therefore signals seemed a bit down. Anyway, I worked HA1YA, JH4JLV for initial #301, JA5OVU, K5GW #302, ZS6AXT, SM3AKW and WA4NJP. On 1296, I worked on 3 Dec OH2AXH, OE9XXI, ZS6AXT, LA8LF and SM3AKW. I was not on much during the NA window. Regarding K1FO's comments on contest activities, I would like to bounce back the paragraph about putting dxpeditions in Eur on for the contest, I feel that the US boys should do likewise, and put some inactive states on for the contest. There is BIG interest to complete WAS among most EME-ers, but with the activity level we now see it is hardly possible. Please note that in the DUBUS/REF contest 1996 there will be multipliers for each VK/VE/W state.

**SM3AKW:**

Karl reports -- The contest was enjoyable in spite of low activity. I made a score of 50x26 on 432 and 43x22 on 1296 for 446.400 points. QSO'd were, on 432, on 7 Oct OE5JFL, G3SEK, I5CTE, F6CGJ, N4GJV, UR5LX, DL9NDD, N2IQU, DL8OBU DL9KR, ON5OF, I2COR, W7CI, 9M2BV, UT5DL, PA3CSG, JA9BOH, OH2PO, SM2CEW, SM4IVE, DL9EBL, DL6NAA and SP5CJT, on 8 Oct IK1MTZ, ON4KNG, HB9SV, UA6LGH, G4ALH, DK8VS, K1FO and S51ZO, and on 4 Nov K2UYH, G2RGK, VE1ZJ, DK3WG, HA1YA, CN2EME, ZS6AXT, K5JL, F5JJI, NC1I, JH0YSI, DJ6MB, G3LQR, DL4MEA, IK5WJD, KD4LT, KB8ZW and WA4NJP; on 1296, on 7 Oct IY4ARI, OE5JFL, HB9BHU, ZS6AXT, EA6/DF5JJ, F1ANH, OZ4MM, F5PAU, GW3XYW, OE9XXI, on 8 Oct OH2AXH, WD5AGO, KB2AH, F6CGJ, W2UHI, EA3UM, DL9EBL and LX1DB, and on 4 Nov DL0SHF, SM4DHN, JH5LUZ, DF9QX, OK1KIR, HB9BBD, F5AQC, G4DZU, IK3COJ, G3LQR, LA8LF, DJ9YW, G4CCH, F5PL, SM5DGX, K3EAV, VE1ALQ, DF3RU, DJ5QX, W4RDI, and on 5 Nov K2UYH, AA4TJ, OE9ERC, JA4BLC and F2TU. I added on 12 Nov, on 1296, at 0500 VE6TA for initial #100, on 18 Nov at 0200 hrd JH5LUZ on 1296 and worked on 432 at 1143 EA3UM, on 30 Nov, on 432, at 2230 I5MPK and 2308 WA4NJP, on 1 Dec, on 432, at 1410 JS3SIM for initial #274, 1441 JA9BOH, 1900 DL8OBU, 2143 WA4NJP, 2320 DL6NAA and DK8LV (439/449) #275, on 2 Dec, on 432, at 1335 JH0YSI and 1355 JA4BLC, and on 1296, at 1458 JA4BLC (449/549), and hrd JR4AEP in sked with ZS6AXT, and on 432 HA1YA and EA2LU, again on 1296 OH2AXH, on 432 CWNR K3HZO and K5GW #276, 2255 I5CTE and 2311 W7CI, and once more on 1296, at 2345 N2IQU on SSB (56/55), followed by KB2AH (56/55), and on 3 Dec still on 1296, at 0010 W2UHI (449/459), and on 432 at 0052 G3SEK, 1421 JH3SIM, 1612 G3HUL and 1633 I5MPK, back to 1296 at 2112 ZS6AXT, 2123 VE1ZJ, 2130 SM2CEW, 2138 DF3RU and 2219 AA4TJ, on 432 at 2243 SM2CEW, CWNR UT7VF, 2300 K5GW (569/569) and 2315 CWNR N4PZ, and on 4 Dec, on 432, at 0118 NC1I. My totals are now on 432: initial #274, DXCC 42 and WAS 31, on 1296: initial #100, DXCC 24 and WAS 16, and on 2304: initial #6, DXCC 4 and WAS 1. I have had a spell of no problems with the 432 and 1296 systems - (YES I AM WOODKNOCKING !!!)

**S51ZO:**

Joze reports -- I worked the EME Contests only for short period, because of the European VHF, UHF



and SHF contests, which were at the same time. On 432, I scored only 10x8. During the 2nd day in 2nd part of the contest, we had winds with speeds over 100 km/h. Probably because I'm on the top of the hill, my antennas were broken. Hopefully I will have them fixed in the near future.

#### **S59DCD:**

Silvo (S50X) writes -- We are QRV on 23 cm with the following equipment: 3 m dish, cir pol, 150 w TX and MGF1302 preamp with .45 dB NF. We worked on 7 Oct IY4ARI (579/529) and on SSB, OE9XXI (579/549), EA6/DF5JJ (O/M), OZ4MM (O/O) and OE5JFL (559/449), on 8 Oct DL9EBL (579/449) and F1ANH (O/O), on 4 Nov OE5JFL (O/O), OE9XXI (539/439), DL9EBL (579/549) and OZ4MM (449/549), and on 5 Nov OE9ERC (539/549). Silvo is interested in skeds and can be contacted at (S. Obrul, Tomsiceva 43, Slovenj Gradec, 62380 Slovenia; Tel ++386 602 43430, FAX ++386 602 45120).

#### **VE1ALQ:**

Darrell writes -- The Dec SW was not very productive, because of a lot of high winds. When I could get on, condx appeared to be not bad. I completed with VK5MC (429/549) for initial #54. Nil from CX9BT. I fell asleep between 0430 and 0600 and missed my sked with JA9BOH. I woke up just in time to work W2UHI and watch the moon set. Because of the danged flu here, I missed half the last weekend of the contest. Saturday I worked it from 0000 to 0400, in bed until 2100, worked until 0300 Sunday, in bed until 0645, and went at it again. I even fell asleep at the switch until my XYL woke me up. This Flu doesn't last long, 48 hrs or so, but nothing to eat, it won't stay down. No 70 cm operation, I could not change feeds. On 23 cm I ended the contest with 35x28, and picked up 11 initials. QSO'd were K3DGY (339/449), VE3ONT (569/559), EA3UM (559/-449), F5PAU (559/559), WA4OFS (440/449), DL0SHF (549/449), F5AQC (559/549), G4CCH (329/449), IK3COJ (439/439), KD5RO (329/439) and LX1DB (579/559). I also worked on sked on 6 Nov at 0100 WA9FWD (O/O) for initial #51. I have installed 2 of KB2AH's 4 x 7289 cavities, and am now running a very cool 800 w output. They will run 1 KW quite easily, but 800 w is a lot cooler, and only draws .2 A per tube at 1550 VDC. I also have less than 2 w with 1 KW out at the termination port, using one of WD5AGO's - 3 dB Hybrid combiners. I need a dual feed for a dish of f/d of 0.43, any suggestions? The 23 cm feed must work as well as my VE4MA feed using a scalar ring and IMU circular polarizer.

#### **W1ZX:**

Willie was on during the Dec SW and worked the following: On 1 Dec at 2235 DK8LV (M/M) for initial #263, 2300 OM1TL nil and 2330 IK0EQJ (O/O) #264, on 2 Dec at 0000 IN3KLQ nil, 0044 N4GJV (559/559) and 2300 OM1TL nil, on 3 Dec at 0000 IN3KLQ nil, 0020 W7CI (559/559), 0108 WA4NJP (559/559), 0158 NC1I (559/559), 0225 KD4LT (559/559), and on 4 Dec at 0010 K5GW (569/569). Back in the Nov part of the ARRL Contest, Willie worked the following: on 4 Nov at 0130 N2IQU, 0209 K1FO, 0224 W7FN, 0245 K2UYH, 0312 CN2EME (O/O) #261 and 0345 WA7BBM, and on 5 Nov DL9KR, 0136 DF5JJ, 0202 N4GJV, 0245 OE5JFL and 0300 K3HZO (O/O) #262. Willie has his new Lunar-Link LA-70B Amplifier working FB. He also has an air dehydrater unit on his 3" transmission line. Willie is still working slowly on his new 32' dish. He is going to be on 30-31 Dec and the Jan 6-7 SWs. Skeds and more information on the '96 EME Int'l Conference can be obtained from: [Willie, W1ZX.](#)

#### **W4HHK:**

Paul reports working on 13 cm, on 2 Dec W7GBI (479/459) with a big signal. No other stations were heard. Paul will listen for JA stations on 2424.1 and xmit on 2304.1 on 9 Dec at 1200 and 6 Jan at 1100.

#### **WA4OFS:**

Harry is moving farther to the south in FL. In preparation for the move, he has taken down his 432 EME array, and has it up for sale - see the FOR SALE section. His 1296 dish is still up, and he will remain active on this band until the move. He plans to return to 70 cm after he is re-settled.

#### **ZS6AXT:**

Ivo is still recovering from his health problems, and was surprised that he was able to muster enough energy to operate the whole of the EME contest. He concentrated on 1296, and only QSY'd to 432 when requested, but netted several initials. On 23 cm, since the 1st part, Ivo QSO'd on 22 Oct F1ANH, DD1XF, VE1ZJ, HB9BBD, SM3AKW and EA6/DF5JJ, on 3 Nov W2UHI, on 4 Nov DL0SHF, OK1KIR, HB9BBD, LA8LF, I2COR, F5AQC, IK3COJ, SM3AKW, DD1XF, GW3XYW and W4RDI for initial #106, and on 5 Nov VE1ZJ, F2TU, OE5JFL, G4CCH and HB9BBD. CWNr were AA4TJ, KD5RO, G4DZU, JH3EAO, ON4UV, DJ5QX, IK3GHY, SM5DGX, S59DCD and DH9FAG. He is making progress toward 13 cm, and expects to start tests early next year. He sends his thanks for all the help, especially to the OE's.

#### **K2UYH:**

The Dec SW started on a sour note. I pointed the dish at a beautifully clear moon, but could hear no echoes or other stations. Before I could determine the cause of my receive problem, my 7650 final went bad. This problem turned out to be a shorted Zenar diode, in the bias circuit. By the time I had the PA running again, it was late into the Eur window, and I was still not hearing. I decided to give up for the night. The next day, I switched feeds for 1296, as planned. Everything worked FB on 23 cm, and I made a number of QSOs. But due to a computer glitch, I lost my log (and the contents of one hard drive!). Nil was heard during skeds with G4DZU or JA9BOH. No JAs were heard during the Asian window, although W2UHI was worked at this time.

#### **NETNEWS:**

**HB9BHU** Fred's ARRL EME contest results are 46x26 on 23 cm.

**GW3I** reports that G4FRE was never on EME from JO01kk, only from JO02ob. HA1YA is QRV with 1.5 KW and 16 x 32 el yagis. He measures 18 dB of sun noise and 5 dB CS/G noise.

**K9ZZH** could not be on for the contest.

**WB0GGM** was on the 1st night of the contest, but his HPA failed on the 2nd night.

**NC7K, Tim** (DM09ep) has 4x25 el FO yagis and 110 w now, and will be increasing to 500-600 w soon.

**ON5OF** blew up his HPA, but has new tube now.

**KB6IGC** is QRV on 432 EME with 125 w and 2 x 28 el yagis. He worked in Dec SM4IVE, DL9KR, KD4LT, K1FO and WA4NJP.

**K3HZO** canceled skeds with N4PZ and ZS6AXT, as they were already worked, and setup an extra sked with HP3XUG.

[AG8OMW](#) will be on EME soon.

**WB5LUA** has a 3CX400 amp working FB on 902. Al wants skeds for 3, 5 and 10 GHz. He heard nil from HB0 on 5.7 GHz.

**W7FN** was not active in Dec.

**JA2JRJ** is getting ready for 23 cm skeds. He is not yet operational, but has a 6 m dish and 4 x NA6E amp at hand.

**W9QXP** worked 7 stations and 3 initials during the Dec SW. VE4MA received nil on 5.7 GHz from the OE9PMJ dxpedition.

**W7CI** added 2 initials in the Dec SW.

**KB2AH** had problems with winds, but reports fair condition on 23 cm during the Dec SW. **KB8ZW** heard HP3XUG and worked W9QXP in Dec.

**N2IQU** was QRV on 23 cm with his new 48' dish in Dec.

**G4CCH** was not QRV in Dec due to bad WX.

**K1VYU** is QRV on 70 cm and looking for skeds. His address is (R. Sizer, 179 Malabar Dr, Westbrook, CT 06498).

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## **FORSALE**

K6HXW is looking for a **432/28 transverter** such as a DEM or SSB unit to replace his ancient MMT.

Call Mike at 805 489 8300 or E-mail: [K6HXW](mailto:K6HXW). W1ZX has available a **large Cavity 1500 watt Amplifier**, (manufacturer National Radio, Malden, MA), 200 MHz to 600 MHz, with GE GL 6942 tube, \$600 and pick-up only;

**Bird 43 Watt Meter** - Call; AIL

**75 Noise Figure Meter** with cabinet for \$US300 & shipping;

**AILTECH 7616 Noise Source** for \$US250 & shipping;

**HP 415A SWR Meter** \$US35 & shipping.

Several **Transco "Y" type Relays** with "N" Connectors for \$US50 & shipping

**Dynatech "D" type Relays** with SC connectors & 3 jumper cables \$US30 & shipping

**General Radio 1216A 30 MHz IF Amp** with meter, great for reading Sun Noise & CS/G Noise with a converter \$US50 & shipping

Call Willie at 301 645 5584, 2000- 2230 EST, FAX 301 645 6853, 24 hrs., or [W1ZX](mailto:W1ZX) K1FO, Steve reports that he has **finally received all of the sheet metal parts** for the current production run of **Lunar-Link 70 cm amplifiers and power supplies**. The LA-70B, 70 cm amplifiers are again shipping. If you had asked Steve to put you on the waiting list and haven't heard from Steve contact him.

Shipments of the **LA-200, 2 meter models will begin in mid Dec**. Steve also has one **LA-70B** from the 1st production run available. It is an assembled model that was used as a **demo unit**, and has some minor scratches in the left side panel, rear panel and inside the unit. It is available for quick shipment at a **reduced price**. Steve can be reached at 203-421-3377.

WA4OFS is moving and has for sale his **432 8 x 3.6 wl polarity rotatable yagi array and rotation system** for \$US500 - pick up only. New open wire phasing lines will have to be added, as he had to cut the present lines to get the array down.

He also has for sale a **Parabolic 1296 xverter with 144 MHz IF** for \$US275

**2 K2RIW RF decks** (no power supply) for \$US275.

Contact Harry at (H. Conowal, 2007 Peachtree Blvd, St Cloud, FL 34769; Tel 407-892-5610).

VK2BE has found a source for **TH328s**. They are commercial pulls, and dc test OK, but of unknown RF quality. To purchase these tubes contact Klaus Reiman, PO Box 577, Willoughby, NSW, Australia 2068; Tel +612 9975 7203, FAX +612 9975 7204.

F6CGJ is **looking for a TWTA for 3 cm of about 50 w or greater**. He presently has 12 w.

KA0RYT is **looking for RCA 61281 power tubes**. His Tel is 612-472-5201.

KB2AH is producing **VE4MA like 1296 feeds** with built-in IMU type circular polarizer.

He also has a complete line of **1296 HPAs** (6, 4, 2 or 1 x 7289 amps) available.

UR4LL has for sale **new GS23B tubes and 2 stage commercial 70 cm PAs** originally manufactured for Russian military stations. The PAs require 10-15 w of drive for the G17B 1st stage and will produce **between .8 and 1.5 KW** depending on the 2nd stage (GS1,7,31 or 35 work FB). The PAs require a power supply of 1.5 KV at 300 mA and 3-3.5 KV at 1.2 Amps. Tubes and PAs may be purchased through Rainer, DF6NA (R. Allraun, Trautenauer Str 12, Wuezburg, 97074 Germany, Tel 0931-86315). Rainer is able to answer all questions about the PAs.

K2UYH is **looking good 7650s and 7289s**. He is also still interested in a **12' or larger dish good for use on 10 GHz EME**.

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## TECHNICAL

**Chuck, W8MQW** has sent in the following review by VE7BQH on his **TI DSP Board Matched Filter** -- I talked with you along with Dave, W5UN after your presentation at the last CSVHF meeting in Colorado Springs. You ended up loaning the Texas Instrument DSP board to Dave along with the books and your custom software. After Dave had the filter for a short while, he suggested I use it as he was going to be away on an extended vacation. So on Dave's last visit with me in Sept, the filter arrived at VE7BQH. I have been using the filter with a 450 cycle tuned frequency since Oct. Like all new filters I have had, it takes some time to get fully accustomed and confident with them (months!). To get the very most out of the filter, I found I needed to add a small external audio amp to allow the input and output

levels to be set to the optimum points. This is, of course, typical of any digital filter. With the operating conditions set as above, I have been getting some very good results. Clearly this filter produces a better signal noise and copy ability than any other filter I have or tried. This statement includes a Time Wave 59+. I have built to many filters to describe; suffice to say the last three have been relatively simple digital switched cap types. My prime filter was the last of these. This is not to say the improvement with the TI DSP board was large. It was not. However, any noticeable difference is significant when listening to signals in the area of 0 dB S/N! The "bonus", particularly at this QTH (in the city), is the noise reduction provided by the DSP technology. I have made several contacts in high noise conditions which would have been difficult, if not impossible otherwise. The weakest link, I still have to deal with is the tuning rate of the RIT on the digital VFO used with my TS830. I need to slow down the rate either electrically or mechanically. It is a bit touchy for a filter of this bandwidth and signals as weak as I get!

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#### **FINAL:**

This month's NL is mixture of reports left over from the contest and newer ones for the Dec SW. There is also much technical material included with the reports, as N1BWT's report on sun noise measurements at 10 Ghz.

Please note the start times of the 20 m net have changed. The net now begins at 1600 on both Saturday and Sunday. The Frequency remains the same 14.345.

The rules for the '96 DUBUS EME Contest have arrived and are shown at the end of this NL.

Another up-date on the [EME Conference](#) is expected, but did not arrive in time for this NL.

The new directory is still not printed, but is expected any day.

Please keep the info coming. More technical material is still needed. CU of f the Moon next year. Happy New Year & 73 - Al, K2UYH.

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## **EUROPEAN EME CONTEST**

### **Sponsored by REF and DUBUS**

This contest is intended to encourage worldwide activity on moonbounce. Multipliers are DXCC countries plus \*\*\* ALL W/VK/VE STATES \*\*\* << NEW! This gives equal chances for stations from North America, Europe and Oceania.

The rules reward random QSOs, but do not penalize skeds on 2.3GHz or higher.

1. Contest Dates & Periods - The contest happens during two full weekends: 144 and 1296MHz on the first weekend, and 432MHz and all other bands on the second weekend.

Each leg of the contest begins at 00:00 UTC on Saturday and ends at 24:00 UTC on Sunday.

2. Bands and dates :

First leg:	144MHz and 1296MHz	2 /3 rd March 1996
Second leg:	432MHz, 2300MHz and above	23/24 th March 1996

3. Categories

QRP	144MHz	<100kW EIRP
	432MHz	<400kW EIRP
	1296MHz	<600kW ERP
	>= 2300MHz	no separate QRP/QRO categories
QRO	EIRP equal to or greater than stated above.	
PRO	Non-amateur equipment or antenna. (PRO stations will not be ranked.)	

4. Exchange - Callsigns, TMO or RST.

5. Scoring

100 points for each random QSO completed.

10 (ten) points for each sked QSO completed on bands below 2.3GHz.

100 points for each sked QSO completed on 2.3GHz or higher bands.

6. Multipliers - Each DXCC country (except W/VE/VK), plus EACH INDIVIDUAL STATE worked in W/VK or province worked in VE. Multipliers count only if worked by RANDOM (except on 2.3GHz or above).

States and provinces can be determined after the contest using address lists in recent Newsletters or in DUBUS.

7. Total per band - Sum of points multiplied by sum of multipliers.

8. Final score for multiband entries - (Total sum of points on all bands) \* total sum of multipliers on all bands)

9. Classifying - Top score defines one winner per band and one for multiband class. Multiband stations will also be classified on each separate band worked. There are no separate multi-operator classes. Multi-operator and QRO stations will be highlighted in the general classifications.

10. Reporting - Copy of the log for each band with details on points, multipliers and total points.

The following information MUST also be included:

1. Output power, transmit cable loss, antenna type and gain.
2. Working category: QRO/QRP, mono/multi operator.
3. Name(s) and signature(s) of all operators.
4. Locator/State.

Other information is welcome: Comments, conditions, grid locator, station details, photographs, etc...

11. Awards - A certificate will be sent to each entry. All (multi-)band winners will receive a trophy.

12. Logs - Log entries MUST be postmarked no later than 30 days after the end of the second leg (i.e. in the mail by 9 May), to the following address:

DUBUS Verlag  
EME Contest  
P.O. Box 500368  
D-22703 Hamburg  
Germany

Fax: (+49)40-8508972

E-mail: [DUBUS](mailto:DUBUS)

### 13. Referee

Responsible for rules and general questions is:

Ian White, G3SEK  
52 Abingdon Rd.  
Drayton, Abingdon, Oxon OX14 4HP  
England.  
Tel.: (+44)1235-531559  
E-Mail: [G3SEK](mailto:G3SEK)

### Good Luck in the Contest !

For REF: Philippe Martin, F6ETI  
For DUBUS: Rainer Bertelsmeier, DJ9BV  
Referee: Ian White, G3SEK

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Sked requests for JAN 5, # = station possibly not active

Time 432.040

2100z DK8LV - DK3WG  
2130z DK8LV - DJ6MB  
2200z DK8LV - HA1YA

Sked requests for JAN 6, # = station possibly not active

Time 432.040 432.045 432.055 432.060 432.070

0100z	EA2LU - DL6NAA W1ZX - OM1TL			
0130z	W1ZX - DL6NAA WA7BBM - DK3WG KD4LT - DL0UL			
0200z	NC1I - DK8LV DJ6MB - IW5AVM W7CI - DL6NAA W9QXP - DK3WG			
0230z	K3HZO - IW5AVM W1ZX - IN3KLQ KD4LT - K1VYU N4PZ - DL9NDD			
0300z	WG3I - DL9NDD KB2AH - IW5AVM		K3HZO - G3SEK	
0330z	K3HZO - DL9NDD W1ZX - IW5AVM			
0400z	W9QXP - DL9NDD	WA7TZY - KD4LT		
0430z	W8MQW - DL9NDD			
0500z	W7HAH - IW5AVM K9BCT - DL9NDD			
0530z	W7GBI - IW5AVM			
0930z				JR9NWC - N9AB
1000z				JR9NWC - K3HZO
1030z	JA9BOH - K6HXW			
1100z	JA9BOH - K3LFO			JH0YSI - KD4LT
1200z				JH4JLV - KD4LT
1330z				JR9NWC - K5WXN
1730z	SM4IVE - DL3EAG			
1800z				DL9NDD - JO3RNL
1830z	DK8LV - VK5MC			DL9NDD - JR1RCH
1900z	DL6NAA - JA9BOH			DL9NDD - JA8ERE
1930z	DL9NDD - IK0EQJ			DK3WG - JA8ERE
2000z	DK3WG - JA2ODV			DK8LV - JA4BLC

Sked requests for JAN 7, # = station possibly not active

Time 432.070 1296.050

0100z HP3XUG - IW5AVM  
0130z HP3XUG - DL9NDD  
0230z K9KFR - VE1ALQ  
0300z VE3BQN - VE1ALQ  
0430z W0RAP - K3EAV  
0600z VE1ALQ - SM2CEW  
0630z VE1ALQ - DJ9YW  
0700z VE1ALQ - W4RDI  
1030z JS3SIM - KD4LT

Sked requests for DEC 30, # = station possibly not active

Time 432.040 432.070

0400z JR9NWC - N9AB  
0430z JR9NWC - K5WXN  
0500z JR9NWC - K3HZO  
1530z DK8LV - DK3WG

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This information was obtained from: [Scott KD4LT](#)

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For your comments or corrections: [Rein, W6/PA0ZN](#)

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